Fourth Annual
Measurement & Evaluation Report

Health Reform Initiative

Department of Executive Services
Human Resources Division

August 2009

Health Reform Initiative Policy Committee

Jim Buck
Bob Cowan
Kathleen Oglesby
Karleen Sakumoto
Dorothy Teeter
Noel Treat
Caroline Whalen
Anita Whitfield

Measurement and Evaluation Steering Committee

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Kerry Schaefer
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Wendy Soohoo

Judith Clegg, Clegg and Associates
James T. Andrianos, Calculated Risk, Inc.

Kerry Schaefer Nick Maxwell Karleen Sakumoto

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Fourth Annual King County Health Reform Initiative Measurement and Evaluation Report

August, 2009

Key Findings and Policy Recommendations

Goals

- Improve the health of employees and their families.
- Reduce the rate of cost increase for health care.
- Increase the average number of "healthy hours worked" per employee.

Results to date (2006-2009)

Employees and their spouses/domestic partners have:

- Improved 12 out of 14 health risk factors.
- Reduced use of health care for 3 out of 5 key health conditions directly affected by changes in those risk factors.
- Reduced growth in health care costs; King County and employees spent an estimated $18 million less than expected based on cost trends in place before the Health Reform Initiative was implemented.
- Maintained the average number of healthy hours worked per employee.

Conclusions

- Employee health has improved and overall cost growth is in line with the council-approved target.
- Employees showed less growth in health care costs for conditions directly affected by modifiable risk factors than spouses/domestic partners, suggesting that the supportive environment of the workplace may have contributed to a difference in outcomes.
- Major changes in the way health care is delivered and paid for in the external marketplace should result in significant additional opportunities for health improvements and moderation in cost growth.

Policy Recommendations

- Continue intact the package of programs of the Health Reform Initiative through the 2010 – 2012 benefit cycle.
- Continue to play a strong leadership role in the Puget Sound Health Alliance encouraging improvements in the marketplace through cost and quality reporting, payment reform, tools for informed consumer choice, increased transparency and overall improved value.
- Continue independent evaluation of the Health Reform Initiative's impact for the duration of the effort.

Executive Summary

Each year the Health Reform Initiative (HRI) provides a measurement and evaluation report to the King County Executive and the King County Council. This is the fourth such report.

The HRI is a comprehensive, integrated effort to create a healthier King County workforce that is a more knowledgeable health care consumer, along with a health care system that is more efficient and effective in its delivery of care. At its inception in 2004, the HRI had two key goals: improve the health of employees and their families, and reduce the rate of cost increase for health care. The HRI added a third goal in 2007—determine whether employee productivity increased as a result of improvement in health.

To achieve these goals, the HRI has implemented a coordinated set of demand-side and supply-side programs:

Programs to Reduce the Demand for (or Use of) Health Care:

- The Healthy Incentives^{SM} benefit plan design helps employees and their families build good health behaviors and manage chronic conditions more effectively.
- "Healthy workplace" programs include efforts to educate employees about health and the wise use of health care resources, as well as workplace activities to support physical wellness, healthy eating and preventive care (such as annual flu shots).

Programs to Moderate Costs the Health Care System (the Supplier) Charges:

- The Puget Sound Health Alliance brings about changes in the health care system to improve the quality of care and reduce health care costs. The Alliance promotes coordination of care across providers, encourages the use of evidence-based treatment guidelines and has created a system of quality measurement used by all providers, health plans and health plan sponsors in the region.

Health Reform Initiative Results 2006 - 2009

1. Employees improved many behaviors that put them at risk

Comparing 2009 to 2006, employees and their spouses/domestic partners reported improvements in 12 out of 14 health-related behaviors and risk factors as measured in the annual wellness assessment questionnaire. For two measures—physical activity and blood glucose—the changes are inconclusive and not statistically significant.

The risk profile for the King County population is a roll-up of the individual self-reported information from the wellness assessment about modifiable health risk factors, lifestyle behaviors, and biometric measures that may potentially indicate a danger to health. These include nine behavioral measures—alcohol use, depression management, injury prevention, mental health practices, nutrition, exercise, sun exposure, tobacco use, and behavior in response to stress; and five biometric measures—body mass index (BMI—

the ratio of weight to height), blood sugar, cholesterol, systolic blood pressure and diastolic blood pressure.

The greatest reduction in health risks occurred between the first and second years of the program (2006-2007). Additional, though less dramatic improvements occurred in 2008 and 2009. Research conducted by Dee W. Edington, PhD., Director of Health Management Research at the University of Michigan has shown that without intervention the risk level in populations tends to rise, leading to greatly increased health care costs. Dr. Edington has further shown that just keeping the risk level constant over time mitigates the growth in resultant health care costs[1].

Participation in the wellness assessment has reached 90 percent of all eligible employees and their spouses/domestic partners in all four years. Figure 1 below summarizes participant responses regarding their health risks.

Figure 1

Changes in the Percent of Members Practicing Healthy Behaviors and Testing in the "Healthy Range" on Biometric Measurements 2006 Compared to 2009

Health-Related Behaviors		Biometric Measurements	
Moderating alcohol use	■	Body weight to height ratio	■
Managing depression	■	Blood sugar	■
Preventing injuries	■	Cholesterol	■
Maintaining good mental health	■	Systolic blood pressure	■
Eating a healthy diet	■	Diastolic blood pressure	■
Exercising regularly	■		
Avoiding excess sun exposure	■		
Stopping smoking	■		
Managing stress	■		

Key: ■ Improved ■ Stayed the same ■ Got worse

Data are for employees and spouses/domestic partners who completed the wellness assessment in both 2006 and 2009; N= 10,234

These health improvements are particularly notable given the average age of King County employees (47) and the low turnover among these employees as they age. Without effective intervention, an aging population could reflect a worsening of health indicators over time. King County has been successful not only in keeping the healthy people healthy, but has also motivated those employees whose health is not particularly good to make positive health-related changes.

Improvements in body mass index and smoking are especially notable as these changes are very difficult for individuals to make and carry proven return on investment in medical claims. Body mass index (body weight to height ratio) risk for the King

County population has gone down from 67.8 percent in 2006 to 65.4 percent in 2009. Smoking has dropped from 10.4 percent to 6.2 percent. Most corporate health studies see a rise in obesity and blood glucose levels over time as populations age.[2,3,4,5,6,7,8,9,10]

2. Employees improved many behaviors that lead to expensive conditions

The HRI consulted with external experts[11] to determine a list of diseases and health conditions that would show improvements within a period of a few months following changes in the health behavior measured by the wellness assessment. Comparing the cost per member per month for these types of conditions in 2006 to costs in 2009, the HRI saw moderation of per member per month costs for health problems related to smoking, obesity, and alcohol abuse; no statistically significant change for the uncontrolled high blood sugar and cholesterol grouping; and an increase in cost for the stress/anxiety, depression and insomnia grouping.

The cost increase for the stress/anxiety, depression and insomnia grouping may have been driven in large part by the 2006 Washington State Mental Health Parity Act. This law requires plans that offer mental health benefits to provide them at the same level of coverage (e.g. copays) and restrictions (e.g. annual or lifetime maximum benefits) as the non-mental health benefits in the plan. As employees became aware of this change in benefits, King County saw a significant increase in both the number of claims and the cost per claim for mental health-related conditions. In many respects this increase in cost for common mental health conditions may be a good sign that employees are now seeking assistance for problems that can have a high impact on both their ability to work productively and their quality of life overall. These results are shown in Figure 2 below.

Figure 2

Changes in Per Member, Per Month Cost for Health Conditions That Show Improvement within a Few Months of Improvements in Health-Related Behaviors 2006 Compared to 2009

Diseases/Conditions Related To:	Change
Smoking	
Uncontrolled high blood sugar & cholesterol	
Obesity	
Alcohol abuse	
Common mental health conditions (stress/anxiety, depression, insomnia)*	

Key: Improved Stayed the same Got worse

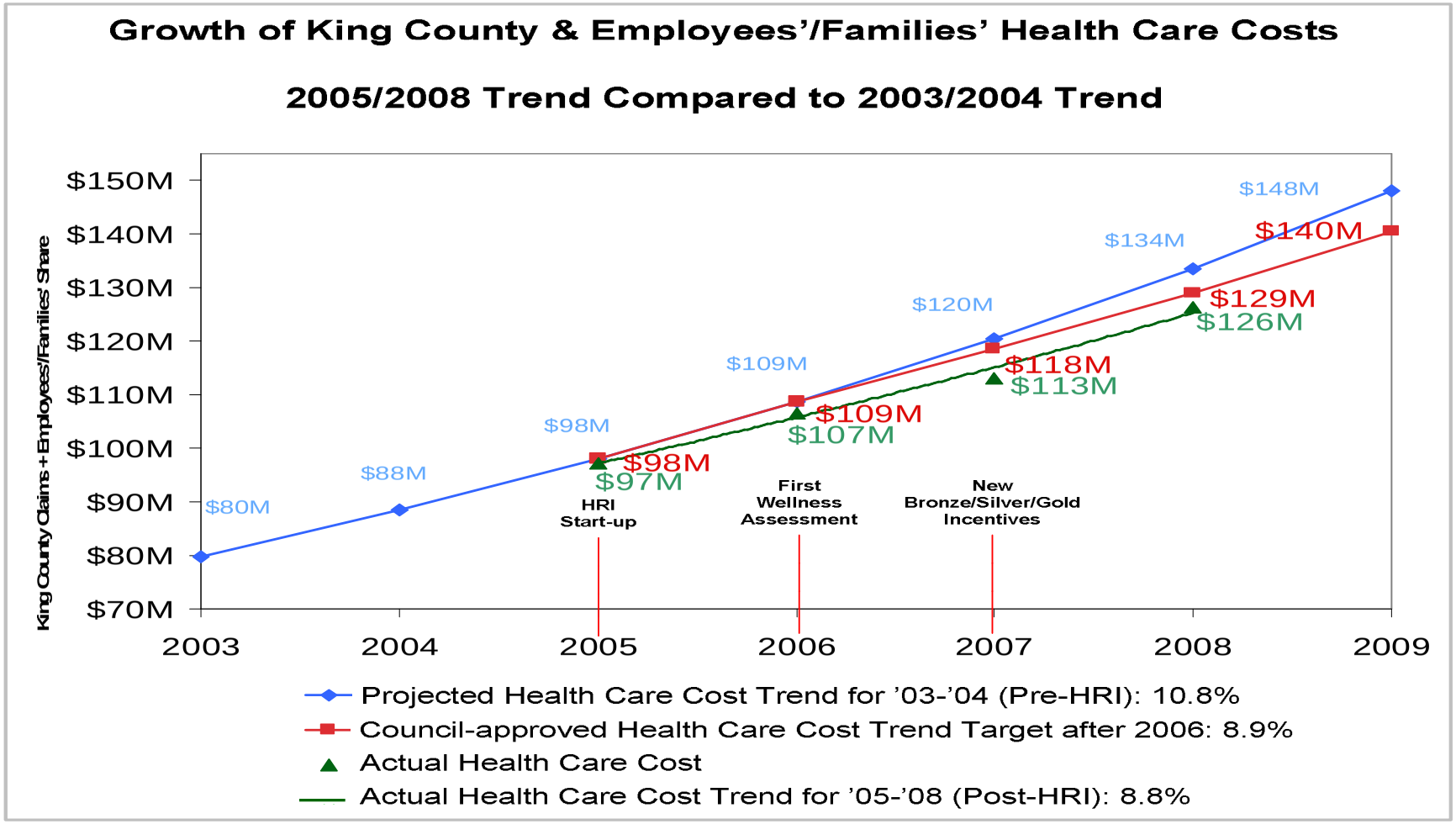
* The 2006 Mental Health Parity Act greatly increased coverage for mental health benefits.

Data are for employees and spouse/domestic partners who were in the KingCare[SM] plan 2002 through 2008. N ranges from 11,120 to 12,732 year to year.

3. The county's health care cost increases have slowed

While the HRI has multiple objectives, perhaps the most closely watched key indicator of the HRI is its related impact on the health care costs county employees and their families are incurring. The expectation was that the HRI's comprehensive approach would reduce the unadjusted claims trend growth from 10.8 percent to below the 8.9 percent target established in 2004 for the 2005 to 2009 period. As Figure 3 on page 6 shows, the actual medical and prescription drug claims have dropped slightly more than the council-approved target. This lower increase in year-over-year costs has resulted in the county and its employees spending an estimated $18 million less for employee and family health care costs for 2005 through 2008 than was projected from the 2003-2004 cost experience.

Figure 3



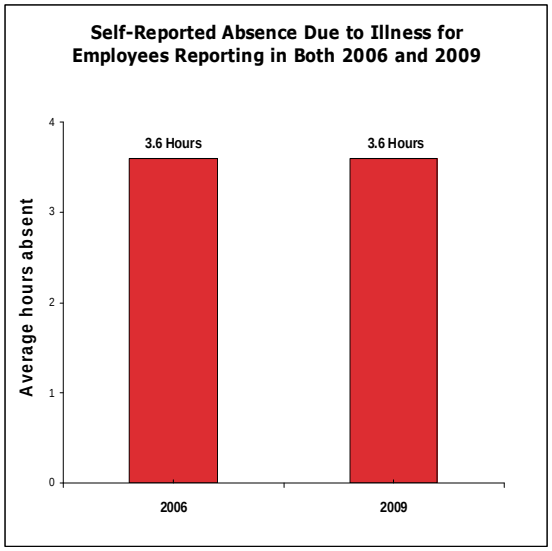
Data are for costs incurred in KingCare[SM] medical and prescription drug claims for active employees and their families with full benefits; excluded are costs for COBRA, early retirees, LEOFF1 retirees, and Local 587 part-time. Costs have not been adjusted for inflation. Population ranged from 17,241 to 24,235 KingCare[SM] members over that period.

4. Employees have maintained the annual number of healthy hours they worked
Comparing 2006 to 2009, employee absenteeism due to personal illness has remained unchanged. Comparing 2008 (the first year for this evaluation measure) to 2009, employee "presenteeism" (being adversely affected at work by health conditions) remained steady.

Health conditions not only affect health care claims costs, they also affect an employee's absence from work and ability to perform at full capacity when at work. In 2006, the HRI started collecting self-reported information from employees about the number of hours they are absent due their own personal health conditions, and in 2008 started collecting self-reported information from employees about the number of hours they come to work but work at less than full capacity due to a health condition (presenteeism).

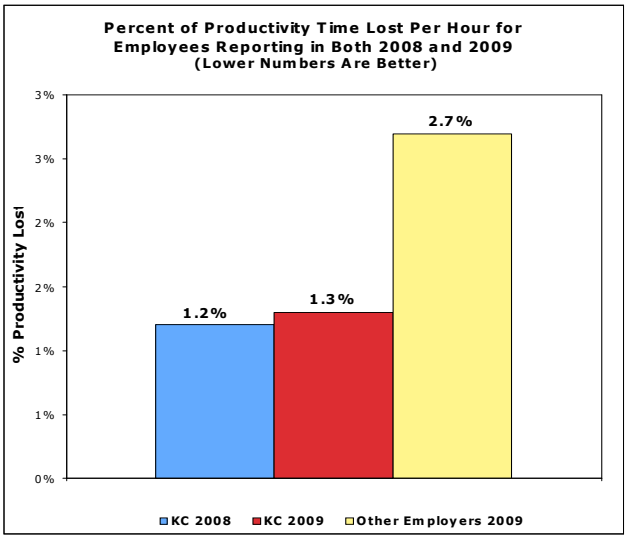
Absenteeism: There was no change in the self-reported hours of absence for employees due to illness in the four weeks prior to taking the wellness assessment for employees who took the assessment in both 2006 and 2009. Figure 4 below shows this comparison.

Figure 4



Data are for employees who answered absenteeism questions in both 2006 and 2009; N=4,642

Figure 5



Data are for employees who answered presenteeism questions in both 2008 and 2009; N=4,642

Presenteeism: The HRI added the eight-question version of the Work Limitations Questionnaire (WLQ), a measure of "presenteeism", to the wellness assessment in 2008. Ideally, this measure would have been included in 2006. However the original focus of the HRI was on measuring changes in direct health care spending. Measurement of costs associated with absenteeism and presenteeism were added at the suggestion of the Peer Review Panel[1]. The pattern of changes for other data from the

[1] This panel was convened by the county executive in the fall of 2006 following the publishing of the first HRI Measurement and Evaluation report. The purpose of this panel of five health care experts was to review the

wellness assessment shows a pattern where the greatest changes occurred between 2006 and 2007, with much smaller or no changes in 2008 and 2009. It is possible that the late introduction of this measure means there may have been one-time gains that showed up in 2007 that were not recorded.

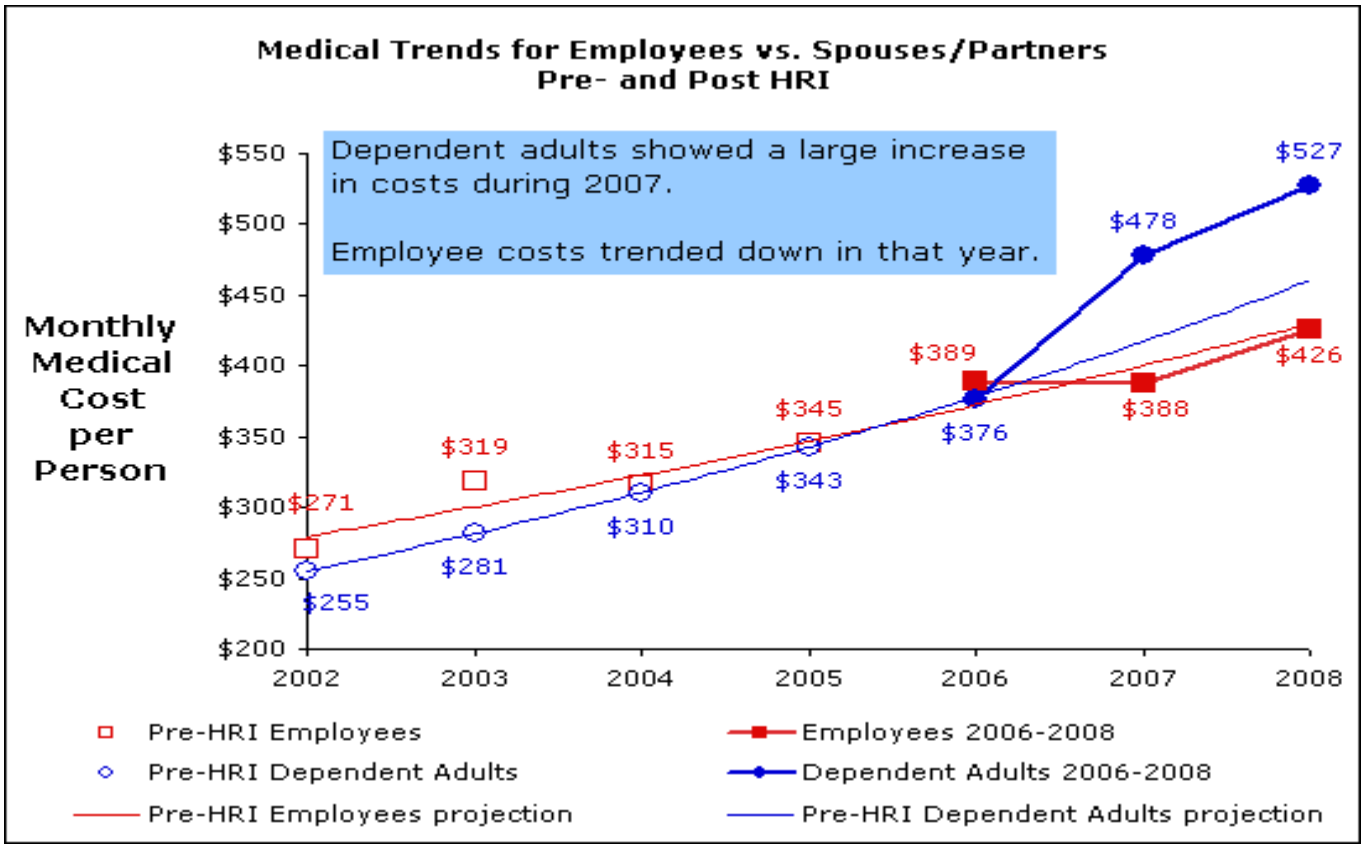
The WLQ is a self-reported measure of absenteeism due to health-related causes. It was developed by Dr. Debra Learner from Tufts University and New England Medical Center. It has proven to be a valid and reliable tool for measuring presenteeism, or on-the-job productivity losses[12]. Raw data from 2008 and 2009 were sent to Dr. Learner's team for evaluation. Overall, the average productivity lost in one hour for employees who answered the WQL questions in both years was 1.2 percent in 2008 and 1.3 percent in 2009. This difference is not statistically significant. Comparatively, previous studies conducted by Dr. Learner for other employers, have shown more than twice that amount at 2.7 percent lost productivity per hour due to presenteeism. These results are shown in Figure 5 above.

Additional Observations

As a part of the overall data analysis, the HRI also checked to see if results were consistent across employees and spouses/domestic partners. There was one rather striking difference between the two groups: medical costs for spouses/domestic partners rose significantly after 2006, while employee costs that were higher pre-HRI, trended downward in 2007 (costs were not adjusted for inflation). Although this observation is not proof of cause and effect, it does suggest that employees may be benefitting from the daily positive health messages and programs in the workplace, and that strategic outreach should be made to spouses and partners to provide them with assistance in changing their health-related behaviors. Figure 6 shows the comparative medical cost trends for employees and their spouses/partners.

strategies, policies and programs of the HRI and make recommendations on program design, implementation and adjustments needed to maximize results and sustainability. The Panel noted that a number of studies have found that costs for sick leave and replacement wages may be as much as three to four times the direct cost of health care. *See King County Health Reform Initiative Check-Up: Report of the Peer Review Panel, October 2006.*

Figure 6



Data are for costs incurred in KingCare[SM] medical and prescription drug claims for active employees and their families with full benefits; excluded are costs for COBRA, early retirees, LEOFF1 retirees, and Local 587 part-time. Costs have not been adjusted for inflation. Population ranged from 17,241 to 24,235 KingCare[SM] members over that period.

5. Changes in the quality and cost of the health care services employees and families receive are underway

The Puget Sound Health Alliance has made major gains in bringing cost and quality issues into the public eye. To date, the Alliance has established five regularly updated public reports comparing quality and cost between local providers and health plans and is in the process of developing additional public reports on the effectiveness of resource use by providers, provider quality from the patient point of view, and disparities in care received by different sub-populations.

In addition to the internal programs that promote improved employee and family health along with wiser utilization of health care resources, the HRI also works on the "supply" side of the health care challenge. Founded in 2004, following recommendations by the King County Health Advisory Task Force, the Puget Sound Health Alliance is an integral component of the HRI's comprehensive strategy to improve employee and family health, enhance the quality of care provided in the region, and reduce the county's health care costs.

A regional consortium of employers, providers, and health plans, the Puget Sound Health Alliance has a critical role in reducing health care costs for everyone in the region by: coordinating care among providers, encouraging the use of evidence-based treatment guidelines, creating public reports to compare cost and quality, and supporting efforts for payment reform. It is these efforts that will have the most powerful effect on the cost of health services used by King County employees and their families.

To date, the Puget Sound Health Alliance has assembled an extensive set of data sources and infrastructure to produce reports the public can use to compare the quality and cost of local health care providers. The first "Community Checkup" report came out in January 2008 with a review of 14 medical groups and about 70 clinics in our region. As the Alliance produced additional reports, the Community Checkup was expanded to compare even more health care providers. The public report can be found at www.WACommunityCheckup.org.

Patients, doctors, employers and all community members now have the ability to research and compare ratings for care at nearby clinics or hospitals. The ratings include a growing list of chronic conditions (e.g., heart disease), cost-effective care (e.g., use of generic drugs, avoiding inappropriate use of X-rays and MRIs), and systems in place to improve safety (e.g., avoid medication errors and 'never events'). As of mid-2009 the Community Checkup report includes:

- Public comparisons of quality and value for care provided by about 200 medical clinics in the region - comparing care for diabetes, heart disease, depression, low back pain and asthma, as well as adherence to evidence-based guidelines for prevention, appropriate use of antibiotics, and filling prescriptions with generics
- Comparisons for medical clinic care provided to the Medicaid population versus those who are covered by commercial health insurance
- Public comparisons of care provided in about 40 hospitals in the region, with a focus on care that is safer and produces better health outcomes (e.g. heart attacks, pneumonia, surgery, etc.), as well as comparisons of what patients think of their experience in each hospital
- Private, customized reports for large purchasers, including King County, showing results for each of the 21 outpatient (ambulatory) care measures reflecting the care provided to that purchaser's covered employees and dependents. These 21 measures cover outcomes for asthma, depression, diabetes, generic prescriptions and antibiotic use, heart disease, low back pain and prevention.
- In the fall of 2009, a public comparison of health plan services will be added to the report, showing scores from the National Business Coalition on Health's national eValue8 program in areas including consumer engagement, provider measurement, pharmaceutical management, prevention and health promotion, chronic disease management and behavioral health. These measures track health plans' success in improving their member's health.

In addition to adding health plan comparisons, the Alliance is working on expanding the report to measure:

- Use of resources by medical group and hospital, and possibly 'systems' of care that include both inpatient and outpatient providers
- Quality and experience with medical clinic care from the patient's point of view
- Disparities in care received by different sub-populations, based on race, ethnicity and/or primary language

Conclusions

The Health Reform Initiative is now in its fourth year. Given the results discussed above, the following conclusions can be made:

- Employee health has improved and overall cost growth is in line with the council-approved target.
- Employees showed less growth in health care costs for conditions directly affected by modifiable risk factors than spouses/domestic partners suggesting that the supportive environment of the workplace may have contributed to a difference in outcomes.
- Major changes in the way health care is delivered and paid for in the external marketplace should result in significant additional opportunities for health improvements and moderation in cost growth.

Policy Recommendations

Based on the results and conclusions, the HRI recommends that King County:

- Continue intact the package of programs of the Health Reform Initiative through the 2010 – 2012 benefits cycle.
- Continue to play a strong leadership role in the Puget Sound Health Alliance encouraging improvements in the marketplace through cost and quality reporting, payment reform, tools for informed consumer choice, increased transparency, and overall improved value.
- Continue independent evaluation of the Health Reform Initiative's impact for the duration of the effort.

I. Introduction

Background

When King County prepared to negotiate a three-year health benefits package with its 92 union bargaining units in 2004, the picture was dismal. Health care costs were rising at rates three times the Consumer Price Index (CPI), threatening to double the cost of the benefits plan in less than seven years. The county recognized that efforts to control sharply increasing costs by limiting access to providers and health services through "gate-keeper" managed care plans, contracting with providers for reduced fees, and after-the-fact claims review would not be enough. A more comprehensive approach was needed to:

- Moderate the demand for health care services by making employees and their families healthier and more thoughtful consumers of health care services
- Control cost on the supply side of health care by increasing the quality and efficiency of health care delivery by providers.

In 2005, King County launched the Health Reform Initiative (HRI), a comprehensive, integrated effort to tackle both the problems in the health care system itself and the ever-increasing utilization of health services by county employees and their families. At its inception, the two key goals of the HRI were to 1) improve the health of employees and their families, and 2) reduce the rate of cost increases for health care. A third goal was added in 2007—measure the improvement in productivity ("healthy hours at work") resulting from the improved health of employees. From the outset, the HRI has resisted the "easy", short-term fix of shifting additional costs to employees through premiums; choosing instead to craft a comprehensive solution that addresses both the supply and demand side of the health care cost equation. The goal has been to reduce costs for everyone—employees and the county—rather than to simply shift costs to employees.

The HRI's comprehensive approach provides resources and programs at three levels. At the center is the Healthy Incentives^{SM} benefits plan that focuses on helping employees and their families build good health behaviors and manage chronic conditions more effectively. Supporting the benefits plan is an organizational philosophy that creates a healthy workplace, including a set of programs to educate employees about health and the wise use of health care resources, as well as workplace activities to support physical wellness, healthy eating and preventive care (such as annual flu shots). The focus of these two levels is moderating *demand* for health care.

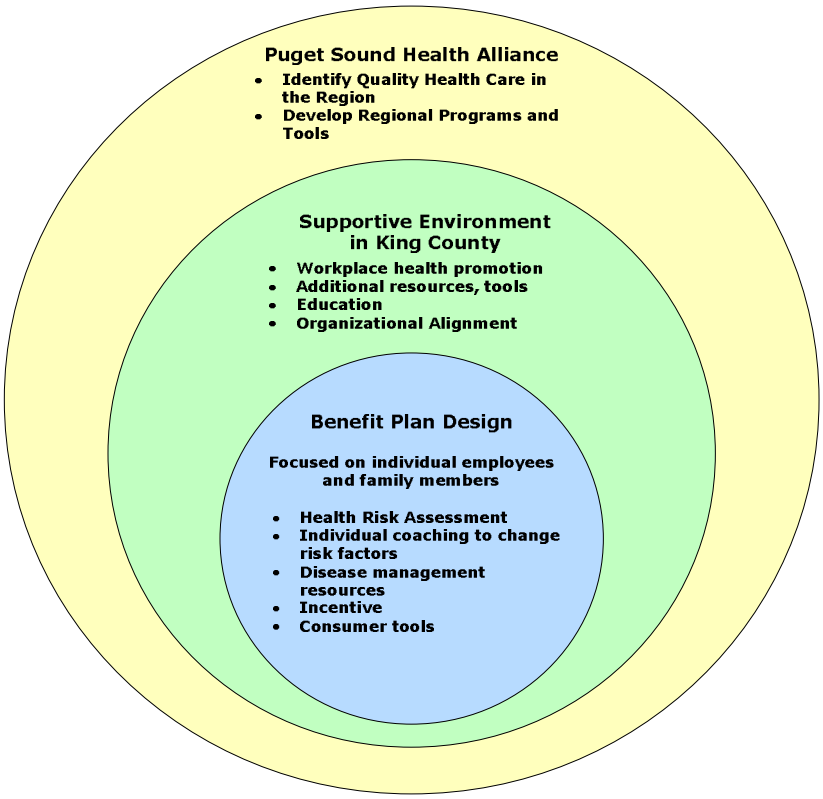
The third level of the HRI is the Puget Sound Health Alliance, created in collaboration with other health care purchasers, providers, and plans to address the cost and quality issues in health care across the Puget Sound region. Key programs of the Alliance focus on changes needed in the external marketplace to improve the quality of care and reduce health care costs through more efficient and effective delivery of services to individual patients. The Alliance promotes coordinating care across providers, encouraging the use of evidence-based treatment guidelines, and creating a system of quality measurement used by all providers, health plans and health plan sponsors in the

region. The focus of the third level of the HRI is moderating costs on the *supply* side of health care.

The conceptual framework of the HRI is presented in Figure 7 below:

Figure 7

King County Health Reform Initiative



Detailed information about the history, goals and objectives and previous reports on the measurement and evaluation of the Health Reform Initiative are available at http://www.kingcounty.gov/employees/HealthMatters/Visitors/HRIToolkit.aspx .

Evaluation timeline

The county ramped-up its HRI intervention strategies over a period of three years. In 2005, the five "care intervention" programs (nurse advice line, disease management programs, case management, provider best practice, and performance provider network) were implemented on a *pilot* basis. The HRI also started education programs showing how employees' health behavior and health care choices have a direct effect

on both their own costs and the county's costs; e.g. using Focus on Employees website, monthly mailing of the *Health Matters* newsletter to employees' homes, and live presentations in the workplace

In 2006, employees and their spouses/domestic partners participated in the first annual wellness assessment and individual action plan cycle. A large number of healthy workplace programs were also launched or expanded, including the "Eat Smart, Move More" campaign, Live Well Challenge, Weight Watchers at Work® , Choose Generics campaign, and Healthy Workplace Funding Initiative In 2007, the bronze, silver and gold out-of-pocket expense levels of the health plans went into effect, and participation in the worksite health promotion programs intensified.

The key elements of the HRI are now in place and some fine tuning has been done as the HRI gains experience. In spite of the programs' varying start dates, HRI has now been in operation long enough to see emerging trends for its initial goals of improving employee health and reducing the rate of health care cost growth. The general timeline for measurement and evaluation for the HRI is described as shown in Figure 8 below.

Figure 8

Evaluation Timeline

Results	Period	Comment	Report
Baseline	2005	Establishes reference point for measuring changes	August 2006
Indicative Findings	2006	Early point estimates too preliminary to signal directional change	August 2007
Directional Guidance	2007	Initial indications of serial results that could represent emerging trends	August 2008
Early Trends	**2008**	**Likely emerging trends**	**August 2009**
Program Trends	2009-2010	Statements of cumulative change, 2005-2009	August 2010

II. Data Sources and Confidentiality

In order to accurately measure the results of the HRI, King County is collecting and storing insurance claims for medical and pharmacy in both the KingCare℠ and Group Health plans. Slightly more than 80 percent of all employees (and their families) are covered by the KingCare℠ plan, with the remaining 20 percent covered by the Group Health plan.

The county strictly adheres to the Health Insurance Portability and Accountability Act of 1996 (HIPAA) to ensure confidentiality of individual employee and dependent

information. The county uses an external data integrator service to "de-identify" individual records and assign a new, random identifier that cannot be traced back to the original employee/dependent. This process allows all of an employee's household's medical and pharmacy claims to be combined without identifying which employee or dependent is involved.

Some analyses are not possible with HIPAA de-identified data. For this reason, some of the data used in this report were collected from online reports of aggregated data from the external third party claims administrators for the county's medical and prescription drug benefits.

In addition to claims data, the county is collecting de-identified individual responses for each question in the wellness assessment. Participants were aware that their answers on the wellness assessment would be treated as confidential medical information so that staff at HealthMedia and Healthways would be able to see their responses; however, the staff at King County would not be able to see how any specific person answered the questions. Participants were also aware that their individual action plan and coaching would be determined by their answers on the wellness assessment.

The claims data and responses to the wellness assessment are de-identified by an outside vendor and integrated as described in the next section. This data collection is the foundation of the analyses reported here, and will support future analyses to determine which current and future interventions can improve employee health, increase the quality of care in the health care market, and reduce the county's health-related costs.

Another data source for the HRI is summary information from Healthways (the vendor providing individual action plan services) about progress in reducing or eliminating risk factors reported by participants during the course of their individual action plan activities.

Technical Appendix

The detailed Technical Appendices prepared by the HRI Health Care Statistician is available for review by contacting the HRI at http://metrokc.gov/employees/hri_toolkit/contact.htm.

III. Results

No program can be successful if participation does not reach a critical mass. The HRI has achieved participation rates that approach "best in class" as defined by D.W. Edington, Ph.D., Director of the Health Management Research Center at the University of Michigan. Dr. Edington has been conducting longitudinal studies of twenty corporate health promotion and wellness programs covering over two million persons for more than 30 years. "Best in class" programs achieve participation in at least one program

activity by 95 percent of all eligible people[13]. As noted below, the HRI is seeing participation rates of 90 percent in the Healthy Incentives[SM] program alone; this does not include people who may choose to do only the worksite health promotion activities.

Participation in the annual wellness assessment is consistently 90 percent of eligible employees and their spouses/domestic partners. The number of people who then follow up with an individual action plan that addresses their health risks has increased from 88 percent in 2006 to 92 percent in 2008. These rates are summarized in Figure 9 below.

Figure 9

Percent of Eligible Employees and Spouses/Domestic Partners Who Have Completed the Wellness Assessment and Individual Action Plan 2006 Through 2009

Year	Number Eligible	Number Completing Wellness Assessment	Percent of Eligible Completing WA	Number Completing Individual Action Plan	Percent of WA Takers Completing Action Plans
2006	19,702	17,844	90.56%	15,703	88.01%
2007	19,377	17,772	91.72%	15,913	89.53%
2008	19,495	17,410	89.30%	16,074	92.37%
2009	21,085	18,788	89.11%	Pending	Pending

Data are for all active employees and their spouses/partners who are in the KingCare[SM] and Group Health plans.

In addition to participation in the HRI's interventions, in 2007 the program began closely monitoring four key results that indicate whether the effort is producing the intended changes. These key measures include:

1. Modifiable health risk factors for the population
2. Costs for health conditions that would likely improve within a few months of improvement in health-related behavior
3. Overall health care costs
4. Healthy hours worked (reductions in illness-related absenteeism and presenteeism)

Analysis and discussion of the evaluation results for each of these measures appear in the numbered sections below.

1. Changes in modifiable risk factors 2006 -2009: *Employees improved many behaviors that put them at risk*

The risk profile for the King County population is a roll-up of the individual self-reported information from the wellness assessment about modifiable health risk factors, lifestyle behaviors, and biometric measures that potentially indicate a danger to health. These include nine behavioral measures—alcohol use, depression management, injury prevention, mental health practices, nutrition, exercise, sun exposure, tobacco use, and behavior in response to stress; and five biometric measures—body mass index (BMI—

the ratio of weight to height), blood sugar, cholesterol, systolic blood pressure, and diastolic blood pressure.

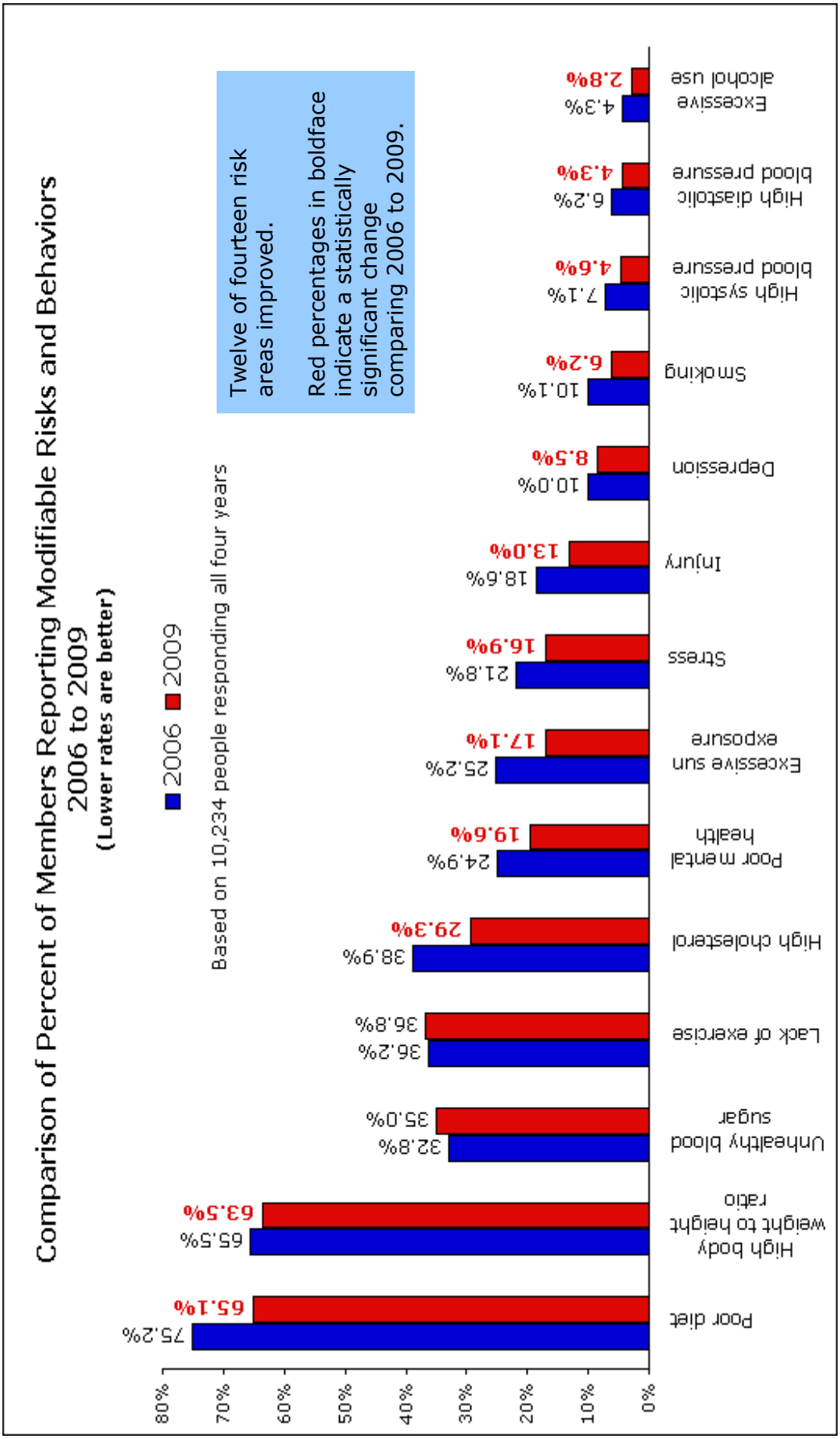
The greatest reductions in health risks occurred between the first and second years of the program (2006-2007). Additional, though less dramatic improvements occurred in 2008 and 2009. This pattern of immediate risk reduction, followed by a regression to previous levels, is typical for many health promotion programs whereby initial improvements in health risks are achieved the first year and additional effort is required to sustain these improvements over time. Research conducted by Dr. Edington has shown that without intervention the risk level in populations tends to rise, leading to greatly increased health care costs. He has further shown that just keeping the risk level constant over time mitigates the growth in resultant health care costs[14].

Comparing 2009 to 2006, employees and their spouses/domestic partners reported improvements in 12 out of 14 health-related behaviors and risk factors as measured in the annual health risk assessment. For two measures—physical activity and blood glucose—the changes are inconclusive and not statistically significant. Figure 10 on page 18 shows the overall change in these results 2006 to 2009.

In addition to showing the level of risk for each individual factor, results for each person taking the wellness assessment can also be expressed as an overall risk score for that person. The number of people taking the wellness assessment, categorized as high risk, has dropped from 44 percent in 2006 to 34 percent in 2009. The number of low risk people has increased from 51 in 2006 to 60 percent in 2009.

These health improvements, although self-reported, are particularly notable given the county's stable employee base with an average age of 47. Without effective intervention, an aging population would expect to see a worsening of health indicators year-over-year. King County has been successful, not only in keeping the healthy people healthy, but in actually motivating positive health changes. Improvements in body mass index and smoking are particularly notable as these changes are very difficult for individuals to make, and they carry proven return on investment in medical claims. Body mass index (body weight to height ratio) risk for the King County population has gone down from 67.8 percent in 2006 to 65.4 percent in 2009. Smoking has dropped from 10.4 percent to 6.2 percent. Most corporate health studies see a rise in obesity and blood glucose levels over time as populations age.[15,16,17,18,19,20,21,22,23]

Figure 10



Data are for employees and spouse/domestic partners who completed the wellness assessment in both 2006 and 2009.

2. Changes in utilization of health care for conditions directly affected by changes in risk factors: *Employees improved many behaviors that lead to expensive conditions*

Risk factors such as poor nutrition, lack of exercise and smoking affect a long list of health problems, some of which respond quickly to changes and some that may take several years or more. For example, people who stop smoking will experience an immediate decrease in symptoms related to bronchitis, asthma, pneumonia and other respiratory infections. The HRI consulted with external experts[24] to determine a list of diseases and health conditions that would show improvement within a period of a few months following changes in the health behavior measured by the wellness assessment. Comparing the unadjusted costs per member, per month, for these conditions in 2006 to costs in 2009 (costs were not adjusted for inflation), the HRI saw improvements in three out of five of the condition groupings (conditions related to smoking, obesity, and alcohol abuse); no statistically significant change in one grouping (uncontrolled high blood sugar and cholesterol); and an increase in per member for common mental health conditions (stress/anxiety, depression and insomnia.)

It is important to note that the Washington State Mental Health Parity Act went into effect in 2006. This law requires plans that offer mental health benefits to provide them with the same level of coverage (*e.g.* co-pays) and restrictions (*e.g.* annual or lifetime maximum benefits) as the non-mental health benefits in the plan. As members became aware of this change in benefits the county saw a significant increase in both the number of claims and the cost per claim (unadjusted) for mental health related conditions. In many respects this increase in costs for common mental health conditions is actually a good sign that members are now seeking assistance for problems that can have a very high impact on both their ability to work productively and their overall quality of life.

Figures 11—24 provide detail regarding the specific categories of conditions related to smoking, uncontrolled high blood sugar and cholesterol, obesity, alcohol abuse and common mental health conditions and the year-over-year changes in claims for each. The numbers of members (employees and spouses/domestic partners) included in Figures 11 through 25 ranged from year to year from 11,120 to 12,732 (see Technical Appendix for details.)

Smoking

From 2006 to 2009 the self-reported rate of smoking decreased 3.9 percentage points from 10.1 percent to 6.2 percent (Figure 11). This change was statistically significant. Overall, costs for smoking-exacerbated conditions (unadjusted) are lower than they would have been had smokers not quit (Figure 12.) Rates of bronchitis, asthma, respiratory infection, pneumonia, and flu are reduced in populations with lower smoking rate (Figure 13.)

Figure 11

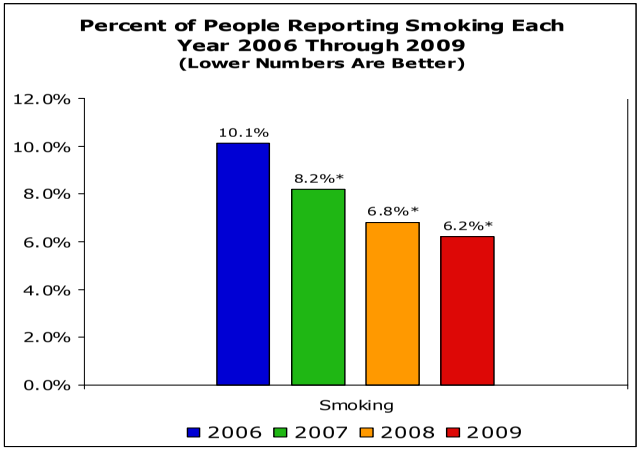


Figure 13

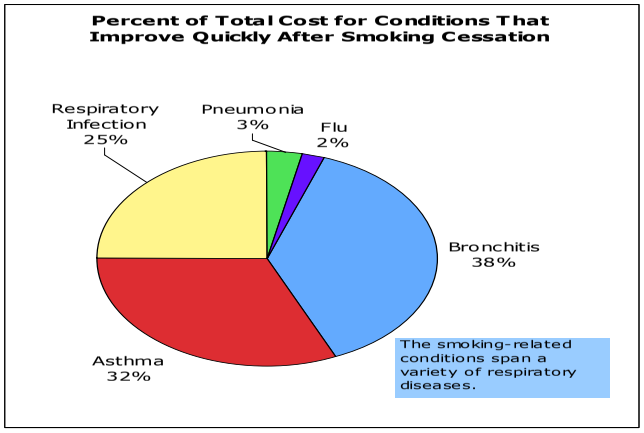
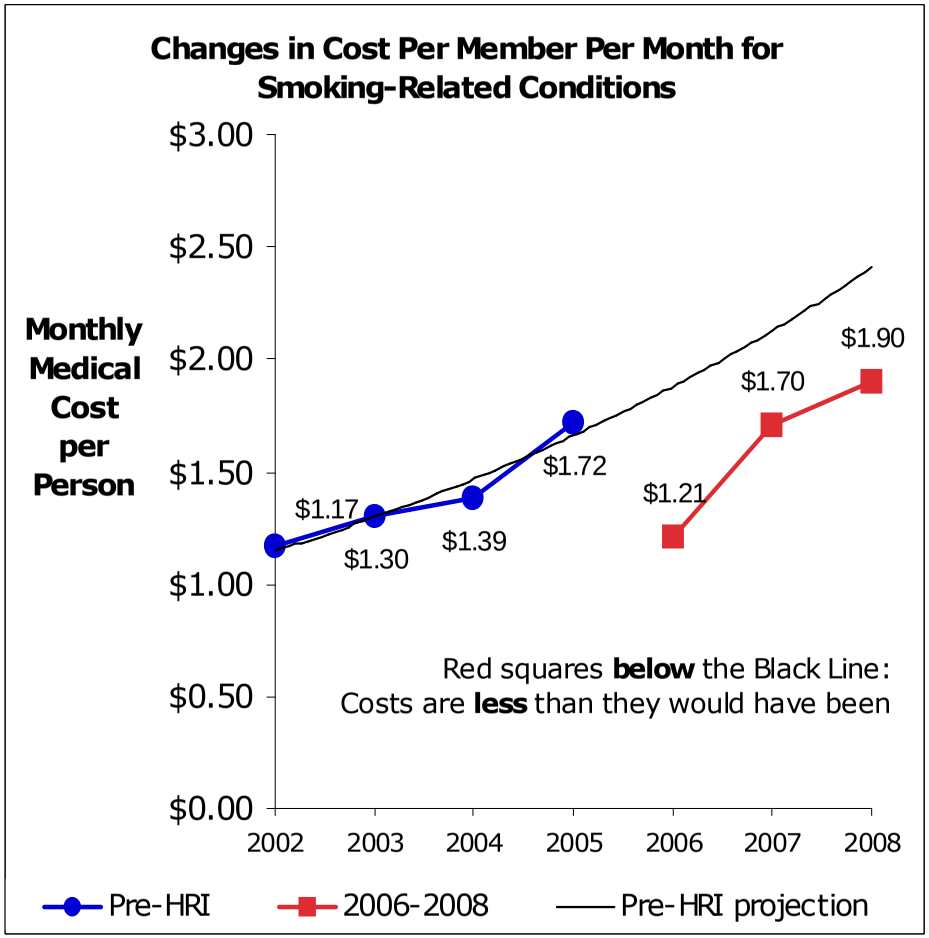


Figure 12



Uncontrolled high blood sugar and cholesterol

High blood sugar, high cholesterol and high blood pressure are closely associated (Figure16.) The self-reported number of participants who had high cholesterol dropped a statistically significant 9.6 percentage points between 2006 and 2009, and the number with high blood sugar rose 2.2 percentage points. The change in the number of people reporting high blood sugar is not statistically significant (Figure14.) Costs for these conditions (unadjusted) dropped in 2006 before rising faster than the trend in 2007 (Figure 15.)

Figure 14

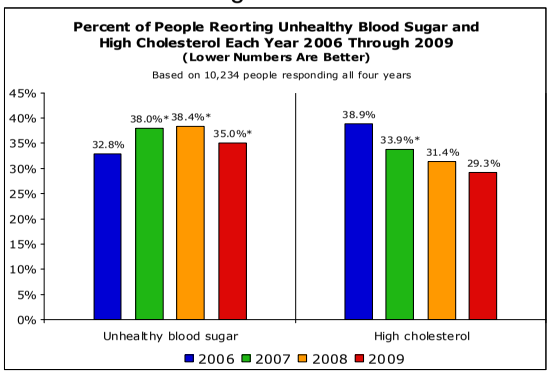


Figure 16

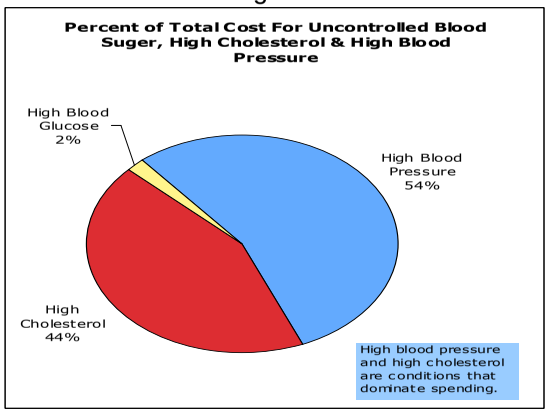
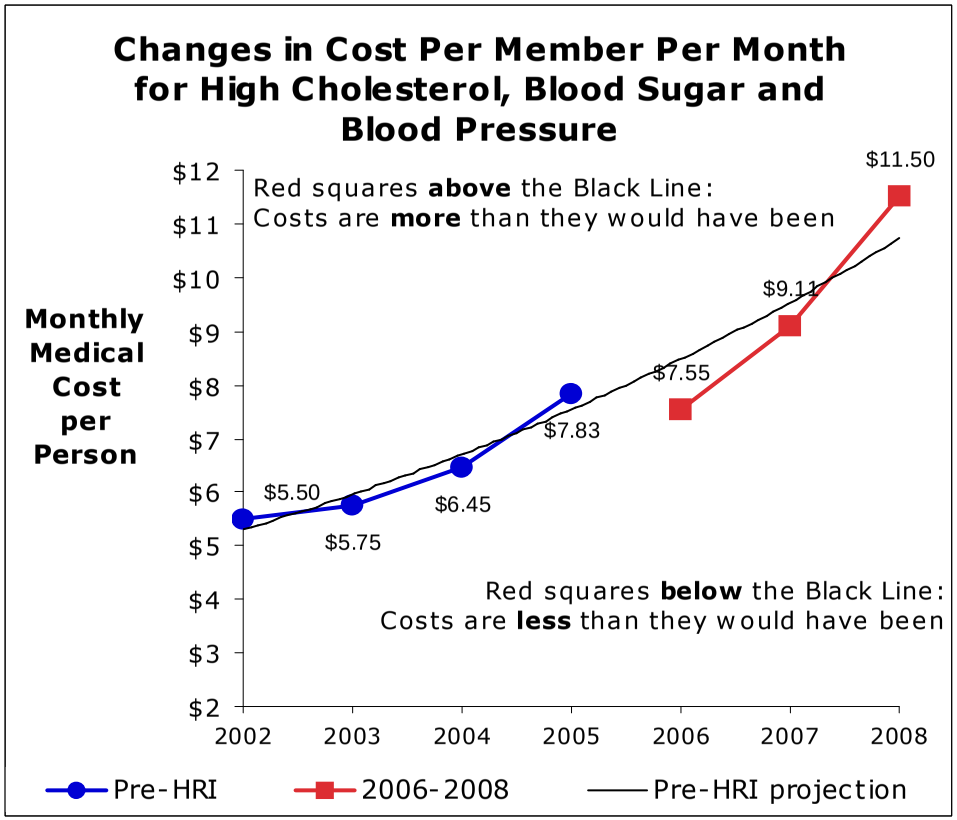


Figure 15



Obesity

Spending is tracked for patients whose primary diagnosis is obesity. Many obese patients are diagnosed for conditions related to obesity without the diagnosis code for obesity being used; only people who have an actual diagnosis of obesity are included in this analysis, and thus only "obesity" is shown in Figure 19. People diagnosed as "obese" are a subset of the total number of people reporting high body weight to height. The percentage of participants self-reporting a high weight to height ratio dropped a statistically significant 2.0 percentage points from 2006 to 2009 (Figure 17.) Costs for treating obesity (unadjusted) dropped in 2006 and 2007, and rose sharply in 2008 (Figure 18.) This rise may be related to expanded communication regarding a medically-supervised weight management program available to KingCare[SM] members who are obese and requesting bariatric surgery.

Figure 17

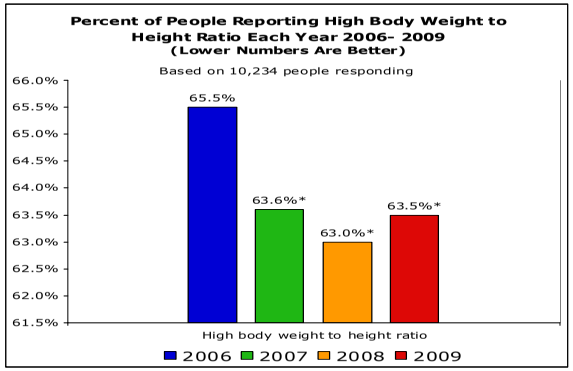


Figure 18

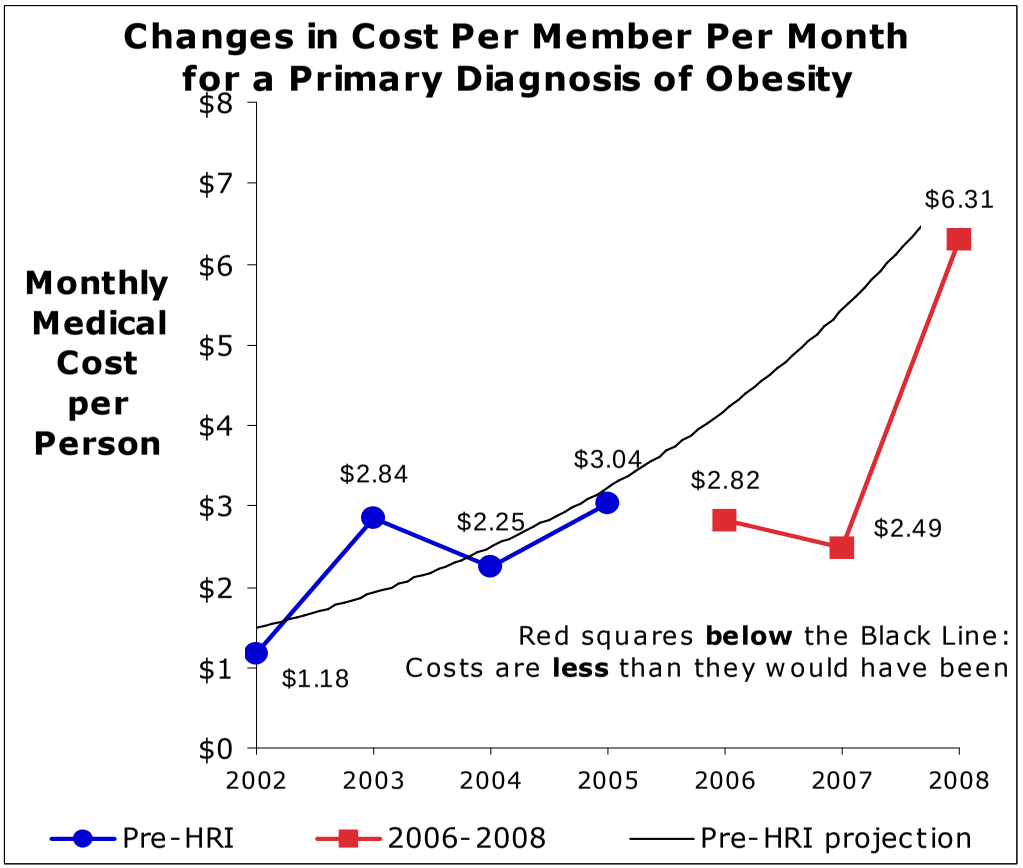
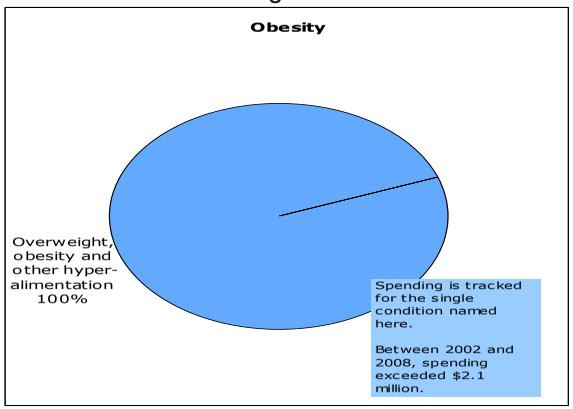


Figure 19



Alcohol Abuse

Rates of gastro-intestinal hemorrhage, gastritis and other conditions are higher in populations who abuse alcohol (Figure 22.) There was a statistically significant drop of 1.5 percentage points in the number of people self-reporting alcohol abuse on the wellness assessment from 2006 to 2009 (Figure 20.) Costs for conditions related to excessive alcohol (unadjusted) are lower than they would have been based on pre-HRI projections (Figure 21.)

Figure 20

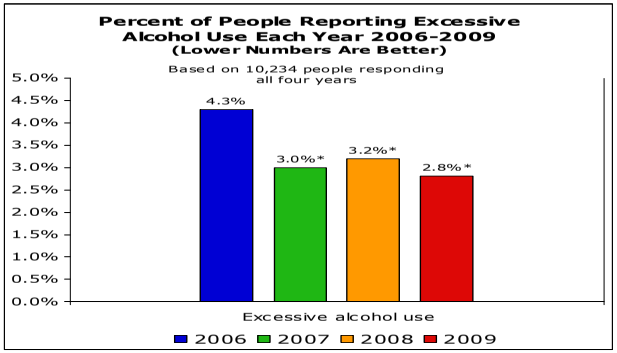


Figure 22

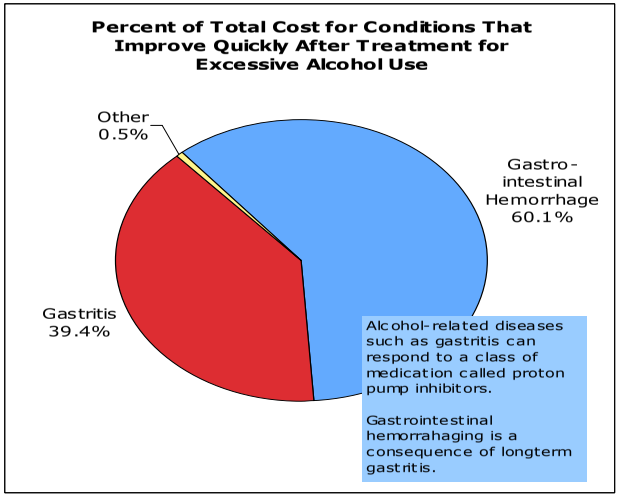
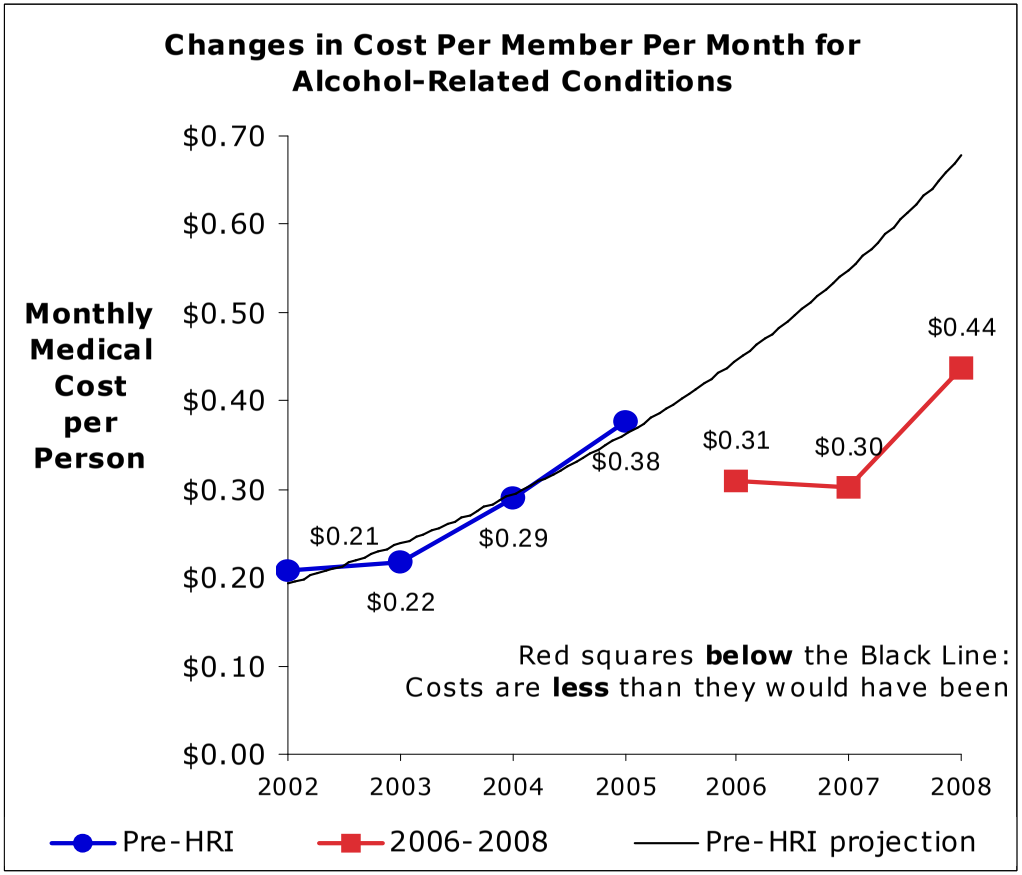


Figure 21



Common Mental Health Conditions

There are three sections of questions on the wellness assessment related to mental health. Between 2006 and 2009 the number of people reporting problems in these three areas showed statistically significant drops as follows: depression—1.5 percentage points, stress—4.9 percentage points and mental health—5.3 percentage points (Figure 23.) After remaining on the on the 2003-2004 trend in 2005, costs (unadjusted) rose rapidly in 2006 and 2007 (Figure 24.) It is important to note that the Washington State Mental Health Parity Act went into effect in 2006. This law requires plans that offer mental health benefits to provide them with the same level of coverage (*e.g.* co-pays) and restrictions (*e.g.* annual or lifetime maximum benefits) as the non-mental health benefits in the plan. As members became aware of this change in benefits the county saw a significant increase in both the number of claims and the cost per claim for mental health-related conditions. In many respects this increase in costs for common mental health conditions is actually a good sign that members are now seeking assistance for problems that can have a very high impact on both their ability to work productively and their quality of life overall. Figure 25 shows the proportion of common mental health costs for depression, anxiety and insomnia.

Figure 23

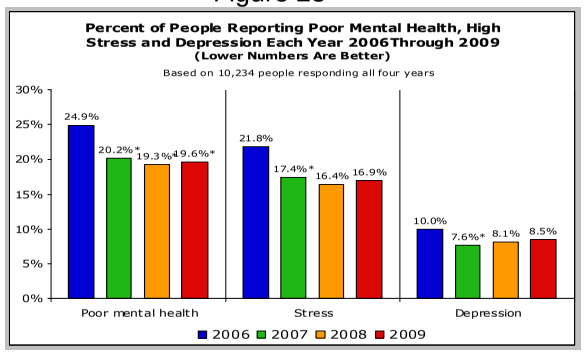


Figure 24

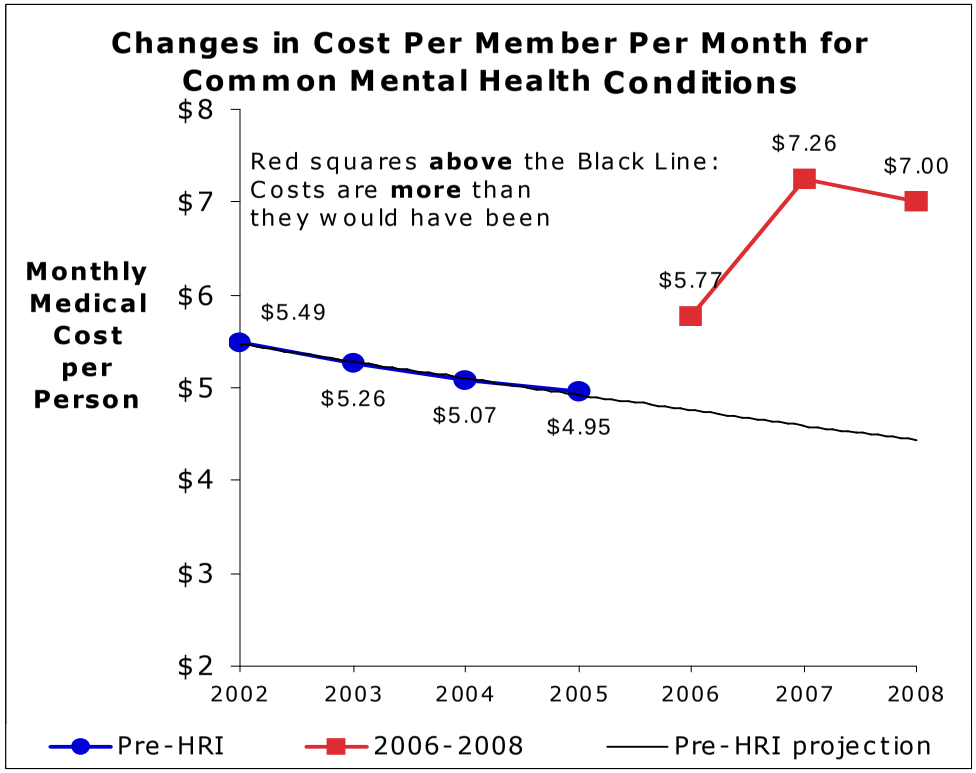
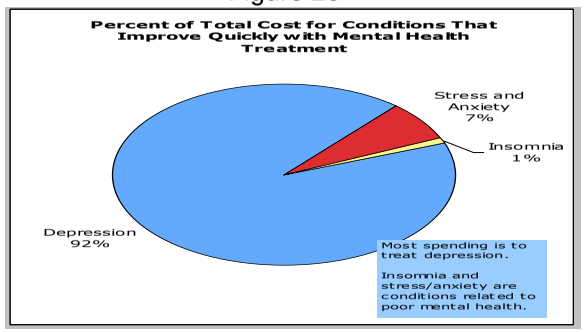


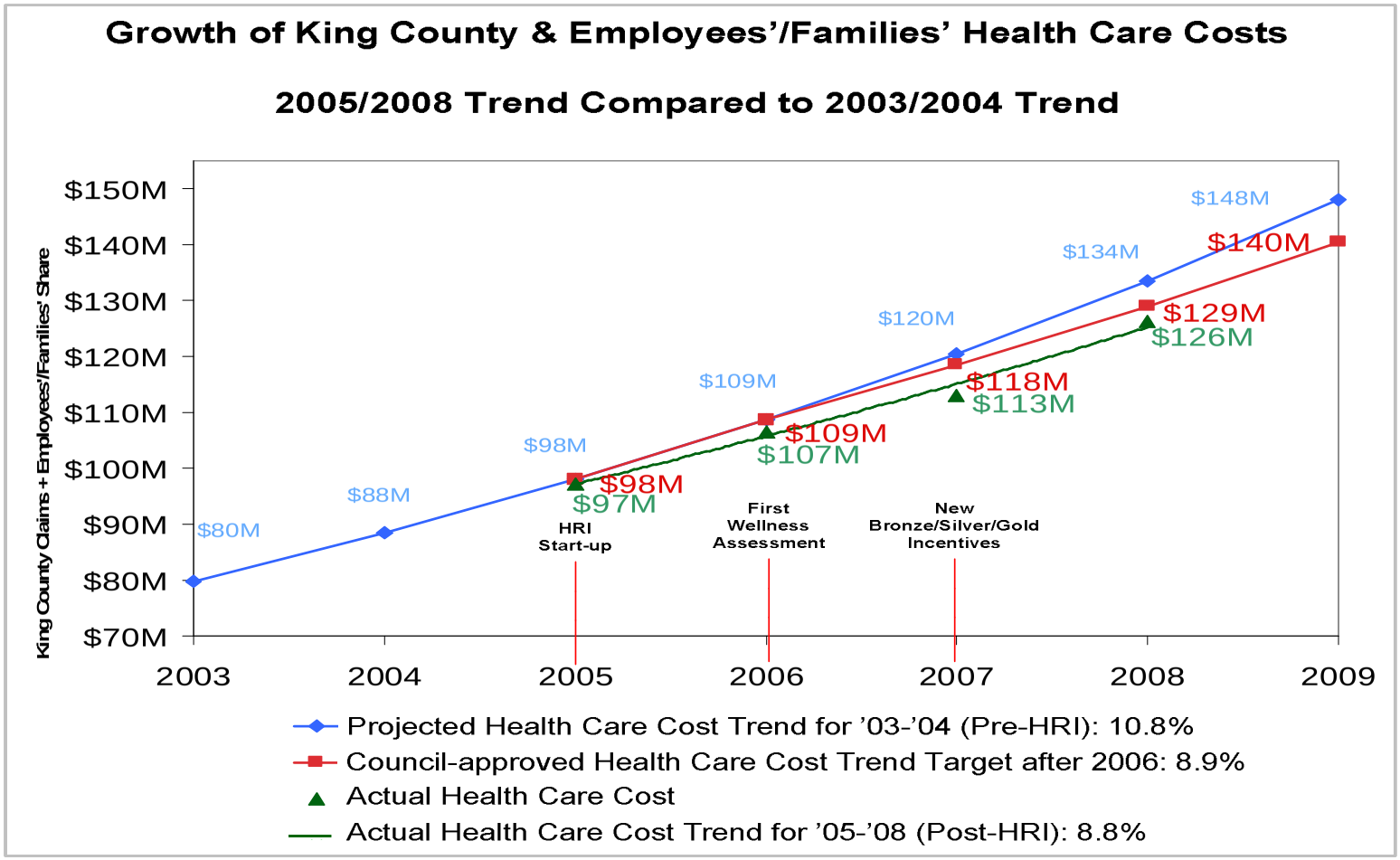
Figure 25



3. Financial impacts: *The county's health care cost increases have slowed*

While the HRI has multiple objectives, perhaps the most closely watched key indicator of the HRI is its related effect on the health care costs county employees and their families incur. The expectation was that the HRI's comprehensive approach would reduce the unadjusted claims trend growth from 10.8 percent to below the 8.9 percent target established for the 2005 to 2009 period. As Figure 26 shows, the actual medical and prescription drug claims have dropped slightly more than the council-approved target. This lower increase in year-over-year costs has resulted in the county and employees spending an estimated $18 million less for employee and family health care costs for 2005 through 2008 than was projected from the 2003—2004 cost trend.

Figure 26



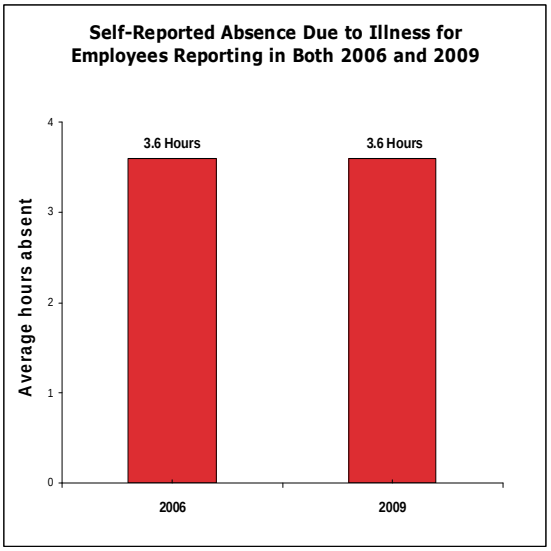
Data are for costs incurred KingCare[SM] medical and prescription drug claims for active employees and their families with full benefits; excluded are costs for COBRA, early retirees, LEOFF1 retirees, and Local 587 part-time. Costs have not been adjusted for inflation. Population ranged from 17,241 to 24,235 KingCare[SM] members over that period.

4. Increasing Healthy Hours Worked: *Employees have maintained the annual number of healthy hours worked*

Health conditions not only affect health care claims costs, they also affect an employee's absence from work and ability to perform at full capacity when at work. In 2006, the HRI started collecting self-reported information from employees about the number of hours they are absent due to their own personal health conditions, and in 2008 started collecting self-reported information from employees about the number of hours they come to work, but perform at less than full capacity, due to a health condition (presenteeism).

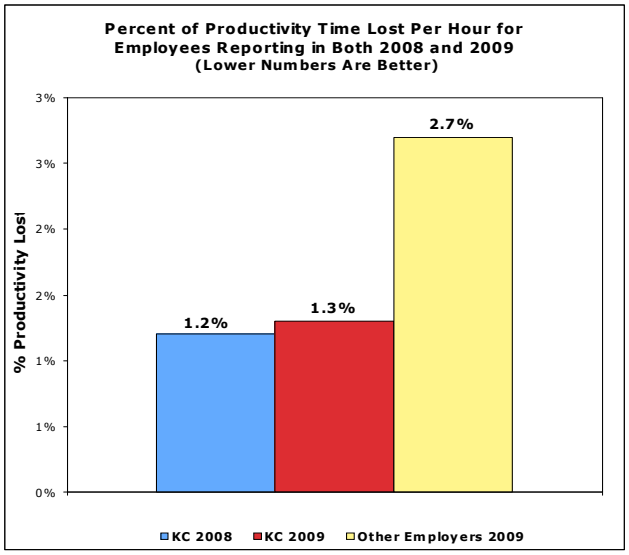
Absenteeism: There was no change in the self-reported hours of absence for employees due to illness in the four weeks prior to taking the wellness assessment for employees who took the assessment in both 2006 and 2009. Figure 27 below shows this comparison.

Figure 27



Data are for employees who answered absenteeism questions in both 2006 and 2009; N=4,642

Figure 28



Data are for employees who answered presenteeism questions in both 2008 and 2009; N=4,642

Presenteeism: The HRI added the eight-question version of the Work Limitations Questionnaire (WLQ), a measure of "presenteeism", to the wellness assessment in 2008. Ideally this measure would have been included in 2006. However the original focus of the HRI was on measuring changes in direct health care spending. Measurement of costs associated with absenteeism and presenteeism were added at the suggestion of the peer review panel[2].

[2] This panel was convened by the county executive in the fall of 2006 following the publishing of the first HRI Measurement and Evaluation report. The purpose of this panel of five health care experts was to review the strategies, policies and programs of the HRI and make recommendations on program design, implementation and adjustments needed to maximize results and sustainability. The Panel noted that a number of studies have found that costs for sick leave and replacement wages may be as much as three to four times the direct cost of health care. *See King County Health Reform Initiative Check-Up: Report of the Peer Review Panel, October 2006.*

The pattern of changes for other data from the wellness assessment shows a pattern where the greatest changes occurred between 2006 and 2007, with much smaller, or no changes, in 2008 and 2009. It is possible that the late introduction of this measure means there may have been one-time gains that occurred in 2007 that were not recorded.

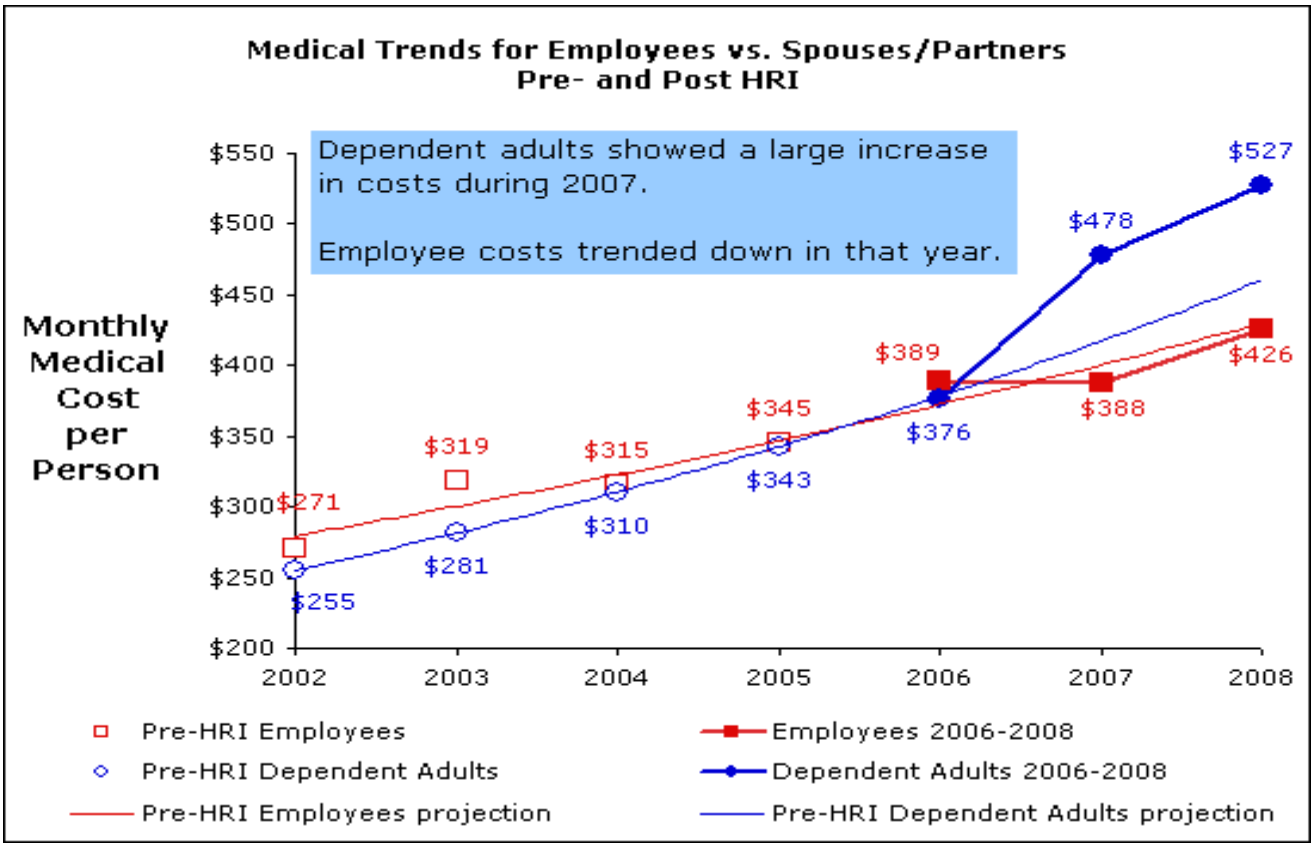
The WLQ is a self-reported measure of absenteeism due to health related causes. It was developed by Dr. Debra Learner from Tufts University and the New England Medical Center. It has proven to be a valid and reliable tool for measuring presenteeism, or on-the-job productivity losses[25]. Raw data from 2008 and 2009 were sent to Dr. Learner's team for evaluation. Overall, the average productivity lost in one hour for employees who answered the WQL questions in both years was 1.2 percent in 2008 and 1.3 percent in 2009. This difference is not statistically significant. Comparatively, previous studies for other employers conducted by Dr. Learner have shown more than twice that amount at 2.7 percent lost productivity per hour due to presenteeism. These results are shown in Figure 28 above.

The overall score for presenteeism is a weighted sum of four sub-components relating to time (how difficult is it for the employee to get started at the beginning of the day), physical abilities (ability to sit or stand in one position and perform repeated tasks), mental-interpersonal (difficulty in concentration on work and contact with other people), and output (ability to complete tasks.) Looking at the specific sub-components of presenteeism for 2009, 5.4 percent of employees had illness-related problems with time management, 4.9 percent had problems on physical aspects, 5.2 percent had problems with the mental-interpersonal aspects, and 4.1 percent had problems with output. There was no significant change in results from 2008 to 2009.

Additional Observations

As a part of the overall data analysis, the HRI also checks to see if results are consistent across both employees and spouses/domestic partners. In doing this analysis there was one rather striking difference between the two groups: medical costs (unadjusted) for spouses/domestic partners rose significantly after 2006, while employee costs that were higher, pre-HRI, trended downward in 2007. Although this observation is not proof of cause and effect, it does suggest that employees may be benefiting from the daily positive health messages and programs in the work place, and that strategic outreach should be made to spouses and partners to provide them assistance in changing their health-related behaviors. Figure 29 shows the comparative medical cost trends (unadjusted) for employees and their spouses/partners.

Figure 29



Data are for costs incurred in KingCare[SM] medical and prescription drug claims for active employees and their families with full benefits; excluded are costs for COBRA, early retirees, LEOFF1 retirees, and Local 587 part-time. Costs are not adjusted for inflation. Population ranged from 17,241 to 24,235 KingCare[SM] members over that period.

5. The Puget Sound Health Alliance: *Changes in the quality and cost of the health care services employees and families receive are underway*

The Puget Sound Health Alliance has made major gains in bringing cost and quality issues into the public eye. To date, the Alliance has established five regularly updated public reports comparing quality and cost among local providers and health plans and is in the process of developing additional public reports on the effectiveness of resource use by providers, provider quality from the patient point of view, and disparities in care received by different sub-populations.

In addition to the internal programs that promote improved employee and family health and wiser utilization of health care resources, the HRI also works on the “supply” side of the health care challenge. Founded in 2004, following recommendations by the King County Health Advisory Task Force, the Puget Sound Health Alliance is an integral component of the HRI’s comprehensive strategy to improve employee and family health, enhance the quality of care provided in the region, and reduce the county’s health care costs.

A regional consortium of employers, providers, and health plans, the Puget Sound Health Alliance has a critical role in reducing health care costs for everyone in the region by coordinating care among providers; encouraging the use of evidence-based treatment guidelines; creating public reports to compare cost and quality; and supporting efforts for payment reform. It is these efforts that will have the most powerful effect on the cost of health services used by King County employees and their families.

To date, the Puget Sound Health Alliance has assembled an extensive set of data sources and infrastructure to produce reports the public can use to compare the quality and cost of local health care providers.. The first "Community Checkup" report came out in January 2008 with a review of 14 medical groups and about 70 clinics in our region. As the Alliance produced additional reports, the Community Checkup was expanded to compare even more health care providers. The public report can be found at www.WACommunityCheckup.org.

Patients, doctors, employers, and all community members now have the ability to research and compare ratings for care at nearby clinics or hospitals for a growing list of chronic conditions (e.g., heart disease), cost-effective care (e.g., use of generic drugs, avoiding inappropriate use of X-rays and MRIs), and systems in place to improve safety (e.g., avoid medication errors and 'never events'). As of mid-2009 the Community Checkup report includes:

- Public comparisons of quality and value for care provided by about 200 medical clinics in the region - comparing care for diabetes, heart disease, depression, low back pain and asthma, as well as adherence to evidence-based guidelines for prevention, appropriate use of antibiotics, and filling prescriptions with generics
- Comparisons for medical clinic care provided to the Medicaid population versus those who are covered by commercial health insurance
- Public comparisons of care provided in about 40 hospitals in the region, with a focus on care that is safer and produces better health outcomes (e.g., for heart attacks, pneumonia, surgery, etc.), as well as comparisons of what patients think of their experience in each hospital
- Private customized reports for large purchasers, including King County, showing results for each of the 21 outpatient (ambulatory) care measures reflecting the care provided to that purchaser's covered employees and dependents. These 21 measures cover outcomes for asthma, depression, diabetes, generic prescriptions and antibiotic use, heart disease, low back pain, and prevention.
- In the fall of 2009, a public comparison of health plan services will be added to the report, showing scores from the National Business Coalition on Health's national eValue8 program in areas including consumer engagement, provider measurement, pharmaceutical management, prevention and health promotion, chronic disease management and behavioral health. These measures track health plans' success in improving their member's health.

In addition to adding health plan comparisons, the Alliance is working on expanding the report to measure:

- Use of resources by medical group and hospital, and possibly 'systems' of care that include both inpatient and outpatient providers
- Quality and experience with medical clinic care from the patient's point of view
- Disparities in care received by different sub-populations, based on race, ethnicity and/or primary language

IV. Conclusions

The Health Reform Initiative is now in its fourth year. Given the results discussed above, the following conclusions can be made:

- Employee health has improved and overall cost growth is in line with the council-approved target.
- Employees showed less growth in health care costs for conditions directly affected by modifiable risk factors than spouses/domestic partners suggesting that the supportive environment of the workplace may have contributed to a difference in outcomes.
- Major changes in the way health care is delivered and paid for in the external marketplace should result in significant additional opportunities for health improvements and moderation in cost growth.

V. Policy Recommendations

Based on the results and conclusions, the HRI recommends that King County:

- Continue intact the package of programs of the Health Reform Initiative through the 2010 – 2012 benefit cycle.
- Continue to play a strong leadership role in the Puget Sound Health Alliance encouraging improvements in the marketplace through cost and quality reporting, payment reform, tools for informed consumer choice, increased transparency and overall improved value.
- Continue independent evaluation of the Health Reform Initiative's impact for the duration of the effort.

Endnotes

[1] Edington, DW. 2001. Emerging research: A view from one research center. *American Journal of Health Promotion* 15(5):341-349.

[2] Presenteeism is defined as lost productivity that occurs when employees come to work but perform below par due to any kind of illness

[3] Breslow L, Fielding, J., Herman, A.A., et al. Worksite health promotion: its evolution and the Johnson and Johnson experience. Prev Med. 1994;9:13-21.

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[5] Goetzel RZ, DeJoy DM, Wilson MG, Ozminkowski RJ, Roemer EC, White JM, Tully KJ, Billotti GM, Baase CM, Bowen H, Mitchell SG, Wang S, Tabrizi MJ, Bowen JD, Short M, Liss-Levinson RC, Christaldi J, Baker K. (2007). Environmental approaches to obesity prevention and management at The Dow Chemical Company: second year results. American Heart Association Annual Scientific Sessions, Orlando, FL, November 2007.

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[7] Ostbye T, Dement JM, Krause KM. Obesity and workers' compensation: results from the Duke Health and Safety Surveillance System. Arch Intern Med. 2007 Apr 23;167(8):766-73.

[8] Ozminkowski, R.J., Dunn, R.L., Goetzel, R.Z., Cantor, R.I., Murnane, J., & Harrison, M. (1999). A return on investment evaluation of the Citibank, N.A., Health Management Program. Am J Pub Health, 44(1), 31-43.

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[10] Wang F, McDonald T, Bender J, Reffitt B, Miller A, Edington DW. Association of healthcare costs with per unit body mass index increase. J Occup Environ Med. 2006 Jul;48(7):668-74.

[11] Aetna Informatics Team in an email February 24, 2009.
[12] Lerner D., Amick III, B.C., Rogers, W.H., Malspeis, S., Bungay, K., and Cynn, D (2001). The Work Limitations Questionnaire. *Medical Care,* 39(1): 72-85.

[13] Edington, DW. 2006. *Towards Champion Worksites* checklist sent to the County by the author in May, 2007. Dr. Edington also covered these points in two presentations at the county—the Health Leadership Forum, May 17, 2007, and the Labor Summit, June 11, 2007.

Endnotes

[14] Edington, DW. 2001. Emerging research: A view from one research center. *American Journal of Health Promotion* 15(5):341-349.

[15] Presenteeism is defined as lost productivity that occurs when employees come to work but perform below par due to any kind of illness

[16] Breslow L, Fielding, J., Herman, A.A., et al. Worksite health promotion: its evolution and the Johnson and Johnson experience. Prev Med. 1994;9:13-21.

[17] Centers for Disease Control and Prevention's Task Force on Community Preventive Services. The Community Guide.

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[23] Wang F, McDonald T, Bender J, Reffitt B, Miller A, Edington DW. Association of healthcare costs with per unit body mass index increase. J Occup Environ Med. 2006 Jul;48(7):668-74.

[24] Aetna Informatics Team in an email February 24, 2009.

[25] Lerner D., Amick III, B.C., Rogers, W.H., Malspeis, S., Bungay, K., and Cynn, D (2001). The Work Limitations Questionnaire. *Medical Care,* 39(1): 72-85.